OPINION 1147
STATUS, FOR THE PURPOSES OF TYPE FIXATIONS, OF THE REMAINS OF CHIRONOMID LARVAE (INSECTA, DIPTERA) PROVIDED BY THIENEMANN TO KIEFFER FOR THE DESCRIPTION OF NEW SPECIES BASED ON THE ADULTS REARED FROM THOSE LARVAE

RULING.– (1) If, but only if, there is firm evidence of association of a given adult with the skins of its immature stages, those skins are biologically and for the purposes of nomenclature parts of that individual and therefore are parts of a holotype, paratype, syntype or lectotype, according to the status of the given adult in the original description, and to how the species has been subsequently treated, even if the skins had not been seen by Kieffer.

(2) If skins, or larvae, or pupae, or imagos not seen by Kieffer are from a brood or batch part of which had been examined by Kieffer, then those specimens not seen by Kieffer cannot be types of species established by him but are eligible for consideration if, after the loss of the adult originally described by Kieffer, it is necessary to designate a neotype.

HISTORY OF THE CASE Z.N.(S.) 1968

On 12 January 1970 a letter was received from Mr M. Hirvenoja (*Department of Zoology, University of Helsinki, Finland*) enquiring about the status, for the purposes of type fixations, of the remains of Chironomid larvae in the collection of the late Professor Thienemann. It was Thienemann's habit, at the beginning of this century, to collect larvae and pupae of Chironomid midges and to rear the adults which he then sent to the late Professor Kieffer for identification. Kieffer, in a number of papers, described many new species from material received in this way. Unfortunately, many of the adults are lost and the species cannot be recognised from the original descriptions. Thienemann, however, kept the larval and pupal skins, and from his careful notes it is possible in some cases, though not in all, to identify with certainty which larval remains belong to which species described by Kieffer from a single adult. Moreover, the species can be recognised from these larval remains.

Eventually, after some correspondence, a joint application by Mr Hirvenoja and Dr E.J.Fittkau (*Max-Planck Institut für Limnologie, Plön, Germany*) was agreed with the Secretary on 15 July 1971. It

was sent to the printer on 23 September 1971 and published on 31 December 1971 in *Bull. zool. Nom.* vol. 28, pp. 171–172. The subsequent history of the case is described in the following report by Dr I.W.B. Nye, Assistant Secretary to the Commission.

MODIFIED REQUEST FOR A RULING ON THE STATUS OF PUPAL AND LARVAL SKINS OF CHIRONOMIDAE (INSECTA, DIPTERA) IN THE THIENEMANN COLLECTION Z.N.(S.) 1968

By I.W.B. Nye (*Assistant Secretary, International Commission on Zoological Nomenclature*)

Dr M. Hirvenoja (*University of Helsinki, Finland*) first wrote to the Commission about the status of the Chironomid pupal and larval skins in the Thienemann Collection in the Max-Planck-Institut, Plön, B.R.D., on 10th January 1970. After some correspondence a joint application by Dr M. Hirvenoja and Dr E.J. Fittkau (*Max-Planck-Institut, Plön, B.R.D.*) was received on 5th April 1971, and was published on 31st December 1971 in *Bull. zool. Nom.* vol. 28, pp. 171–172. See Appendix 1.

2. Comments were received from:
   (a) Mr R.V. Melville (*Secretary, International Commission on Zoological Nomenclature*) published in *Bull. zool. Nom.* vol. 29, p. 64. See Appendix 2.
   (b) Dr O. Hoffrichter (*Albert Ludwig University, B.R.D.*) published in *Bull. zool. Nom.* vol. 29, p. 198. See Appendix 3.
   (c) Dr H. Lemche (*Universitetets Zoologiske Museum, Denmark*) published in *Bull. zool. Nom.* vol. 30, p. 76. See Appendix 4.
   (d) Dr James E. and Dr Mary F. Sublette (*Eastern New Mexico University, U.S.A.*) hitherto unpublished. See Appendix 5.

3. In June 1975 the members of the Commission were asked:
   (a) on Voting Paper (75)11 to vote on the proposals set out on page 172 of *Bull. zool. Nom.* vol. 28. See Appendix 1.
   (b) on Voting Paper (75)12 to vote on the proposals set out on page 64 of *Bull. zool. Nom.* vol. 29. See Appendix 2.

The issue on V.P.(75)11 was whether the pupal or larval remains in the Thienemann collection should be regarded as part of the syntype material or not, even if Kieffer never saw them. At the close of the voting period on 16 September 1975 there were 10 votes in favour and 8 against, with one late negative vote and two abstentions. The issue on V.P.(75)12 was whether *Microcricotopus parvulus* and *M. rectinervis* Kieffer could be interpreted by reference to the specimens designated by Fittkau & Lehmann (1970). At the close of the voting period on 16 September 1975 there were 16 votes in favour and 3 against, with one late affirmative vote and one abstention.

4. When studying the comments sent in by members of the Commission with their voting papers it was evident that the wording of both sets of proposals was unsatisfactory. The Secretary of the Commission has therefore, under By-Law 24, deferred publication of the decisions taken by the Commission and considers that the case should be reopened, the proposals reworded, and a new vote taken.

5. The following comments, on the proposals in Appendix 1, were sent in by members of the Commission with their voting papers:

(a) *Alvarado*: 'The proposal involves a serious problem, involving perhaps all the Code. Art. 16a(viii) and Art. 17(4) should be carefully considered before ruling on this case.'

(b) *Bayer*: 'The proposal of Hirvenoja & Fittkau (*Bull. Zool. Nom.* vol. 28, pp. 171–172) and alternative suggested by Melville (*Bull. Zool. Nom.* vol. 29, p. 64) raises some interesting questions and have parallels elsewhere in the animal kingdom. In addition to the insects, many crustaceans also have larval and post-larval stages different from the adults, not to mention differing adult stages according to breeding condition (as in fresh-water crayfishes), all of which leave behind moulted skins or casts that retain taxonomically usable morphological characters. Under Article 17(4) of the Code, any of these developmental stages may be used as a basis for a new taxon and, under Article 24b, names based on them compete in priority with one another and with names based upon the adult stage.

'Similar situations exist in the Coelenterata (Hydrozoa and Scyphozoa) and other invertebrate phyla as well as in some vertebrates that have distinct and taxonomically recognizable ontogenetic stages, but these differ in that they do not leave behind any preservable "morphological shadow".

'Hirvenoja & Fittkau ask that the developmental stages of certain chironomid midges, as represented by their cast skins, be recognized as syntypes of the species in question, even though the

author who described the species upon the adult stage never saw the larvae and/or pupae or their skins, and who, therefore, did not use them in establishing the species. The desirability, and the biological validity, of using these moults of developmental stages to settle taxonomic questions arising after the loss of the original, adult type specimens, are obvious. The question is how to do it within the framework of the Code.

'According to Article 45b, each taxon of the species group is objectively defined by reference to its type specimen. The species now in consideration were based on a single adult specimen each – i.e. a holotype (Article 73a). I think there is no doubt that the cast skins of the earlier stages are parts of the type specimens themselves, as already was pointed out by Commissioner Lemche (*Bull. Zool. Nom.* vol. 30, p. 76). Unfortunately, it must also be conceded that each of these skins is a separate "specimen" as that word is defined in the Oxford English Dictionary, vol. 10 (1933) 1961, and therefore it is not part of a syntypic series, because it was not used by the author in describing the species, even though biologically it is actually a part of the holotype.

'I am conceptually in favour of Hirvenoja and Fittkau's proposal, but I vote against it because I agree with Secretary Melville's opinion that a general ruling is undesirable at this time (*Bull. Zool. Nom.* vol. 29, p. 64). Based upon the Code as it stands, and upon accepted definition of words, I do not believe that cast skins of earlier stages of a holotype can be considered part of a syntypic series if they were not used by the describing author, as they are separate and distinct "specimens". Therefore, I do not agree with the Secretary's alternative proposal to rule that the specimens of *Microcricotopus parvulus* (Kieffer) and *M. rectinervis* Kieffer are lectotypes, as they are not eligible for that status, but I vote in favour of the proposal because these specific cases should be cleared up now. This can be accomplished in this way without prejudice to future consideration of the basic problem'.

(c) *Dupuis*: 'Je suis favorable à l'*esprit* des propositions de Hirvenoja & Fittkau de reconnaître l'éminente valeur de référence du matériel de Thienemann, mais non à la *lettre*, car je considère avec Lemche que les matériaux invoqués constituent une *partie de l'holotype* (de même que des genitalia d'insecte, montées en préparation séparée de l'imago, sont une partie de cet individu). Je pense, avec Melville, qu'une déclaration sur le cas général ne doit pas être hâtive, car elle est destinée à faire jurisprudence.

'Quant aux types désignés par Fittkau & Lehmann, je regrette, toutefois, que la proposition de Melville ne soit pas plus explicitement formulée (comme le souhaite en général Lemche, *Bull. Zool. Nom.* vol. 32, p. 2). Ces types ne représentent certainement pas des

néotypes; il ne s'agit pas non plus de syntypes (comme le pense Hoffrichter), ni de lectotypes (comme le croit Melville), mais bien des parties des holotypes. *Pour l'ensemble de ces raisons, je considère qu'il n'y a pas matière à voter dans l'immédiat.*

'J'ajoute, en vue d'un examen futur plus approfondi de la question, que la raison véritable de la requête de Hirvenoja & Fittkau me paraît tenir à l'insuffisance de la définition de l'holotype dans le Code et son inappropriation à certaines situations taxonomiques concrètes.

'Quant au fond, les holotypes, lectotypes et néotypes, réduits chacun à un spécimen unique et considéré comme base de la nomenclature m'ont toujours heurté car, de plus en plus, la base de la taxinomie devrait être la population et, dans l'intérêt de tous, la nomenclature ne peut vivre comme une abstraction coupée de la taxinomie. Pour cette raison, tout en affirmant la nécessité qu'un matériel type soit délimité et *fini*, je suis favorable à l'esprit des propositions de Corliss (*Bull. Zool. Nom.*, vol. 29, p. 92) et à toute proposition qui aurait pour effet de reconnaitre certaines autres catégories de types que les trois précédentes.

'Dans sa forme même et dans le cas particulier des insectes holométaboles, la notion de "spécimen unique" est insuffisante car il n'y a aucun doute que les restes des stades successifs d'un même *individu* holotype (chorion de l'oeuf, exuvies larvaires, exuvies nymphales, imago) ne soient autant de parties de cet holotype.

'La déclaration la plus utile (en attendant mieux) serait donc de préciser que "Par spécimen unique il faut entendre aussi bien un individu donné, plus ou moins intact, conservé en une seule institution, que les fragments d'un individu jadis entier ou les témoins des stades ontogénétiques successifs d'un même individu, que ces fragments ou témoins soient conservés en un ou en plusieurs lieux".

'L'on voit qu'une telle question mérite mieux que les votes mineurs auxquels je refuse de procéder.'

(d) *Eisenmann*: 'I must vote against the proposal to designate the Thienemann specimens "lectotypes" of Kieffer's nominal species if – as I understand the application – Kieffer never saw the Thienemann immature instars nor was provided with pictures of them (i.e. that are not mentioned in Kieffer's published descriptions). A lectotype under Art. 74 must be drawn from the original describer's type series, i.e. his syntypes; under Art. 73c and 73c(i) the syntypes are the specimens the describer examined or those published pictures and descriptions considered by him in describing the taxon. Unless Thienemann's instars were before Kieffer and considered by him, they cannot be called either lectotypes or syntypes. This is not merely a matter of language. Taxonomic

consequences can follow (as Melville correctly suggests, *Bull. Zool. Nom.*, vol. 29, p. 64). I agree with Melville that the matter may be handled by interpreting Kieffer's names by reference to Thienemann specimens identified by Fittkau and Lehmann, but a nomenclatural ruling should be made only in individual cases, if specialists are in agreement that the identification is correct – obviously a taxonomic question. On one point I disagree with Melville: I do not see how the Thienemann specimens (if not considered by Kieffer as part of his type series) can be designated lectotypes. It seems to me that, where adequately identified (and if the provisions of Art. 75 are otherwise met) the Thienemann specimens may be designated neotypes. In principle, the case is covered by Art. 75c(4); while that provision states that "if a nominal species is based on a sex or immature stage that lacks good diagnostic characters, the neotype may differ in that respect from the original material", I take this to be in effect an example of an appropriate situation, not intended as a limitation to types based on immature stages. The same principle should apply where the holotype was an adult and lacks the diagnostic characters known better in the immature stage, which can be demonstrated to be the same species "from its description and from other sources". To avoid any problem I would ask that a Declaration be issued removing from the Code, for clarification, the unnecessary and somewhat misleadingly restrictive word "immature" from Art. 75c(4). This change would not affect anything of substance but would clarify the intended meaning.'

(e) *Holthuis*: 'The larval or pupal skins of a specimen that later is made the holotype of a species are part of that holotype, and certainly are not syntypes and cannot be made lectotypes.'

(f) *Kraus*: 'The real proposal is limited to point (9) of the application. As it evidently has been possible to identify a number of species on the basis of pupal and larval skins in the Thienemann Collection, there are no longer any problems affecting the identification of those names introduced by Kieffer. I cannot see the necessity for a comprehensive ruling – at least this has not been explained sufficiently.'

(g) *Mayr*: 'The revised proposal does not state as clearly as might be that two questions are involved:

(a) a confirmation that larval and pupal skins are parts of the holotype, as should be evident from the Code; and

(b) whether a particular set of larval and pupal skins, labelled by the same name as that given to an imago type, was correctly labelled.'

(h) *Nye*: 'In a case where it can be established that the larval and pupal skins are the earlier stages of an adult described by Kieffer, the skins are part of the holotype or syntype concerned

and no ruling is necessary.

'In a case where there is no imago and there are no associated skins or where there are skins or larvae or pupae which may or may not be correctly associated, then it would be preferable to leave the option for the choice of a neotype in conformity with the Code, and again no ruling is necessary.'

(i) *Ride*: 'From paragraph 2 of the submission it appears that there are two classes of material involved, namely:

(1) skins of specimens seen by Kieffer (i.e. parts of primary types), and

(2) preserved specimens reared with those in (1) above but not seen by Kieffer.

Specimens in class (1) are parts of holotypes or of syntypes. Specimens in class (2) are not types but may be selected as neotypes where holotypes or syntypes are lost.

'There is no need for Commission action, but if there is any doubt in particular cases, action similar to that proposed in V.P.(75) 12 can be taken.'

(j) *Sabrosky*: 'I am sympathetic to the applicants' problem, but I question whether the Commission should make the ruling requested for a given collection. However, this would be an opportunity for the Commission to express a general view that would provide some guidance for the future and render future applications unnecessary. I suggest that a Declaration along the following lines be considered:

(1) Where there is firm evidence of association of a given adult and its immature stage (e.g. cast skins of larvae, or pupal skin, chrysalis, cocoon or puparium), these are to be regarded as parts of that individual.

(2) If that adult had been the sole type specimen, hence the holotype (designated or not), the remains of the immature stages are parts of the holotype, just as much as a separate wing on a slide, or a slide or capsule of the male or female genitalia. In the case of *Microcricotopus rectinervis* (Kieffer), with its implication that the species was described from only one specimen, the pupal skin of that specimen is part of the holotype, and no Commission action is needed.

(3) If a species was described from two or more specimens, and these can be positively associated with the remains of their immature stages (e.g. by corresponding numbers), the remains are parts of the specimens in the type series, i.e. parts of holotypes and paratypes or parts of syntypes, according to how the species was originally described.

(4) Resolution of the type problem outlined in the preceding paragraph depends on the material. If the remains of the immature stages of the holotype can be positively associated with it, they are parts of the holotype; if only paratypes can be so associated, the parts are parts of paratypes; if then the holotype is lost, the parts of paratypes may be useful and sufficient for recognition of the species; if the holotype is lost and immature stages cannot be associated, then a neotype may be required, depending on necessity, existence of recognizable remains of paratypes, etc.; if syntypes are represented by immature stages, the latter are parts of syntypes and eligible for lectotype designation.

'Responsibility for proper evaluation of the status of material rests with specialists themselves. I am unwilling to agree that the Commission should give a flat ruling in a given case because of the uncertainties involved. Can adults described by Kieffer be positively and individually associated with immature stages preserved by Thienemann, or is it a group association? Did Kieffer even indicate the number of specimens, so that agreement of published number and number of available immature would give a presumption of association? The applicants' mention of occasional errors suggests that the evidence must always be evaluated critically.'

(k) *Tortonese*: 'I agree with Lemche's proposal of having the whole case dropped (except the matter concerning V.P.(75)12).'

(l) *Vokes*: 'I feel that in the event that there was a disagreement of the sort mentioned by Mr. Melville, the problem would result in both taxonomic and nomenclatural issues that should be referred to the Commission – but that would certainly result in far fewer problems needing to be resolved than would the simple ruling on *M. parvulus* and *M. rectinervis* only.'

6. The following comments were sent in by members of the Commission with their voting papers for the proposals in Appendix 2:

(a) *Holthuis*: 'The pupal skin of *Microcricotopus rectinervis* mentioned by Hirvenoja & Fittkau is part of the holotype of that species and no action by the Commission is necessary. If the pupal skin of *M. parvulus* that Fittkau and Lehmann (1970) designated as neotype of that species is that of a syntype of *parvulus*, it could be made a lectotype, but not a neotype. Too little information is given here by the applicants.'

(b) *Sabrosky*: 'See my comment on V.P.(75)11. We have not been given detailed information on which to base a decision in these specific cases. If the Commission were to adopt the views I have expressed on the general case, the question of these two

species (and probably many others) can be settled by the applicants without reference to the Commission. I agree with Dr. Lemche except that for *M. rectinervis*, if the pupal shell is truly that of the only described specimen, it is part of the holotype, not lectotype.'

(c) *Ride*: 'I disagree that the specimens are to be considered lectotypes. In the case of *M. rectinervis* the specimen is a part of the holotype (i.e. a shed skin); in the case of *M. parvulus* there appears to be some doubt and the specimen is most safely to be regarded as a neotype.'

7. It is evident from the above comments that confusion has arisen because the proposals included two classes of material:

(a) preserved larval or pupal skins (not seen by Kieffer), of imagos which had been examined by Kieffer;

(b) preserved skins, or larvae, or pupae, or imagos (not seen by Kieffer), from a brood or batch including some individuals examined by Kieffer.

At this point, therefore, the Secretary wrote to Professor Hirvenoja for clarification of this issue. Dr Hirvenoja replied on 14th February 1976 as follows:

'. . . The main source of information is the notes of Professor Thienemann. We may there find, for instance, that one female has been reared from a stated locality; this implies a one-to-one relationship between the adult female and the pupal exuvia which will usually be mounted on a slide of which the label has the same words as the notes. In other instances we may read "(date) . . . an Kieffer . . . (date) . . . zurück", showing that Kieffer returned the specimens to Thienemann. In cases where several individuals were reared, it is a group relationship and the whole of the material may be in the Thienemann Collection, or it may be difficult to tell whether some specimens are in Brussels (I think Professor Thienemann gave the adults to Dr. Goetghebuer of Brussels when the latter prepared the Chironomid parts of Lindner's *Die Fliegen der Palaearktischen Region* and of the *Faune de France*; these specimens are now in the Brussels museum in a box marked "Types de Kieffer", but there are no Kieffer labels). Some of the adults have been lost.

'In spite of this, I have designated lectotypes from the collection in Brussels if the details agree with a single specimen in Plön. Current nomenclature follows the species concept derived from the metamorphosed material of Thienemann.

'The Thienemann specimens represent only a part of the species described by Kieffer. For instance, there are about 200 species of *Cricotopus* (or *Trichocladius*) in "Lindner", but it has been possible to redescribe only about 50 of these. The Thienemann

material was very important in my revision of this group (Hirvenoja, 1975, *Ann. Zool. Fennici*, vol. 10(1), pp. 1–363). There are several synonyms, but about a quarter of the names in the literature are regarded as nomina dubia!'

8. The general consensus from the comments by members of the Commission quoted above was that in cases of specimens in class (a) above, where there is firm evidence of association of a given adult with the skins of its immature stages, these skins are biologically and for the purposes of nomenclature parts of that individual, and therefore are parts of holotypes, paratypes, syntypes, lectotypes etc. according to how the species was originally described and subsequently treated. In cases of specimens in class (b) above, those specimens not seen by Kieffer cannot be types of species established by him but are eligible for designation as neotypes when the primary type (and its parts) is lost.

9. Once the Commission has ruled on the proposals in paragraph 10 below there is no need for any action by the Commission on *Microcricotopus parvulus* (Kieffer, 1909) and *M. rectinervis* (Kieffer, 1911). From the information given in the original application (see Appendix 1), the type of the former, established as *Cricotopus parvulus*, is a neotype, whereas the type of the latter, established as *Cricotopus rectinervis* must be a part of the holotype.

10. The International Commission on Zoological Nomenclature is asked to rule that in the case of species of CHIRONOMIDAE established by Professor J.J. Kieffer from adults provided by Professor A. Thienemann:

(a) if, and only if, there is firm evidence of association of a given adult with the skins of its immature stages, these skins are biologically and for the purposes of nomenclature parts of that individual and therefore are parts of holotypes, paratypes, syntypes, lectotypes etc. according to how the species was originally described and subsequently treated, even though the skins had not been seen by Professor Kieffer;

(b) if the skins, or larvae, or pupae, or imagos not seen by Kieffer are from a brood or batch part of which had been examined by Kieffer, then those specimens not seen by Kieffer cannot be types of species established by him but are eligible for designation as neotypes when the primary type (and its parts) is lost.

Appendix 1 (from *Bull. zool. Nomencl.* vol. 28: 171-172)

REQUEST FOR RULING ON THE STATUS OF PUPAL AND LARVAL SKINS OR PUPAE AND LARVAE IN THE THIENEMANN COLLECTION, ASSOCIATED WITH ADULTS WHICH HAVE BEEN DESCRIBED AND NAMED BY KIEFFER (INSECTA, DIPTERA, CHIRONOMIDAE). Z.N.(S.) 1968

By M. Hirvenoja (*Dept. of Zoology, University of Helsinki, Finland*) and E.-J. Fittkau (*Max-Planck-Institut für Limnologie, Plön, Germany*)

It was the practice of the late Professor August Thienemann, at the beginning of the century, to rear chironomid midges from larvae and pupae. The adults he sent to Professor J.J. Kieffer for identification. In his numerous publications Kieffer usually described and named the species, when new. Kieffer's adult material has in many cases been lost, and in any case it is often not possible to identify the species from the descriptions.

2. The Thienemann collection in Plön, Germany, contains several pupal skins or pupae and associated larvae or larval skins of the species sent to Kieffer and these were described by Thienemann in his papers on the metamorphosis of the midges.

3. Kieffer's descriptions of the adults are inadequate, but from Thienemann's descriptions of the larval and pupal instars and the specimens in his collection we can identify a number of Kieffer's species (Brundin 1956: 13; Wülker 1956: 4; Fittkau 1962: 6; Fittkau & Lehmann 1970: 392). If this were not the case we should have very many nomina dubia among European Chironomidae.

4. There have been occasional errors (cf. Fittkau & Lehmann 1970: 392), where the development stages in the Thienemann collection do not belong to the adult described under the same name.

5. The development stages may have greater value from the nomenclatural point of view than the adults, many of which have been lost and cannot be identified from Kieffer's descriptions especially where the specimen is a female.

6. Fittkau & Lehmann (1970) have designated as a neotype the pupal skins of *Microcricotopus parvulus* (Kieff.) and *M. rectinervis* (Kieff.) from the Thienemann collection. According to Thienemann (1912: 76) only one male specimen of the latter species has been reared. Thus the neotype in question logically is a part of the holotype described by Kieffer.

7. Since the pupae, larvae and especially the pupal and larval skins in Thienemann's collection are actually earlier stages of the adults Kieffer described, could they not be regarded as part of the type series, that is syntypes from which a lectotype could be designated?

8. It is not possible to apply Article 24b in this case, as that deals with the priority of names given to different parts of the same species.

9. The Commission is therefore requested to give a ruling that in the Kieffer-Thienemann problem in the Chironomidae:

The pupal and larval skins or pupae and larvae in the Thienemann collection are to be regarded as part of the syntype material in cases

where the revisor recognizes the association and may consequently be designated as lectotypes in spite of the fact that Kieffer never saw these pupal and larval skins or these pupae and larvae.

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Appendix 2 (from *Bull. zool. Nomencl.* vol. 29: 64)

COMMENT ON THE APPLICATION CONCERNING PUPAL AND LARVAL STAGES OF CHIRONOMIDAE IN THE THIENEMANN COLLECTION. Z.N.(S.) 1968

(see volume 28, pages 171-172)

By R.V. Melville (*Secretary, International Commission on Zoological Nomenclature*)

It seems to me that the applicants in this case are asking the Commission to make a general ruling that is contrary to the spirit (though admittedly not infringing the letter) of Article 74(c). Furthermore, the ruling requested might be held to trespass into strictly taxonomic territory, especially if, for example, two revisors disagreed on subjective grounds as to the association of a particular Thienemann instar with a particular Kieffer adult. If such a situation were to arise, the existence of a ruling by the Commission that all Thienemann's instars were available for designation as lectotypes might be held to prejudice the taxonomic situation. On the other hand, a request for a ruling that *Microcricotopus parvulus* (Kieffer) and *M. rectinervis* Kieffer were to be interpreted by reference to the specimens designated by Fittkau and Lehmann (1970) would be unobjectionable; and later cases of the same kind can be dealt with individually on their merits. The ruling should make it clear that the specimens involved in the present application are lectotypes, not neotypes.

Appendix 3 (from *Bull. zool. Nomencl.* vol. 29: 198)

COMMENT ON THE PROPOSED RULING ON THE STATUS OF SPECIMENS IN THE THIENEMANN COLLECTION. Z.N.(S.) 1968

(see volume 28, pages 171–172)

O. Hoffrichter (*Biological Institute, Albert Ludwig University, Freiburg im Breisgau, Germany*)

I would like to comment on the paper from Drs. Hirvenoja and Fittkau (*Bull. zool. Nomencl.* 28, 5/6, 1971 : 171–172), from whom I received a separate. I strongly support the authors' request specified therein. It seems that in the insects alone there is the situation of three different stages attributable to a single individual. While, in general, the imago is taken as holotype, it is possible to do this with any stage. I know the Plön collection of Thienemann's material, which is in an excellent state. At the present time, I myself have borrowed some material from it. As Kieffer usually did not preserve the imagines the metamorphosis stages deposited in Plön are the only remainders of the individuals which constituted holotypes of many species. Thus, it is only reasonable to comply with the author's request.

Even if there were larval and/or pupal skins of species which in these stages cannot be identified to the species by themselves until now, it can be foreseen that in the future there will be more details available for identification, when modern or more refined methods of description and determination (multi-variate analysis e.g.) are applied to them. Since these skins would be "per se" the key species of an identification key, it seems almost inevitable to rule them as syntype material. By ruling according to the author's proposal, quite a number of species of Chironomidae could finally receive existing types. This is very desirable, as currently many revisers are involved in a worldwide revision of many groups of this family.

Appendix 4 (from *Bull. zool. Nomencl.* vol. 30: 76)

COMMENT ON THE PROPOSED RULING ON THE STATUS OF SPECIMENS IN THE THIENEMANN COLLECTION Z.N.(S.) 1968

(see volumes 28, pages 171–172)

By Henning Lemche (*Universitetets Zoologiske Museum, Copenhagen, Denmark*)

The shells of foraminifera, brachiopods, and molluscs, etc., etc., as well as innumerable fossils of different kinds are based on less than whole specimens but are nevertheless at any time accepted for selection as primary types.

The only unfortunate thing in the problem as here presented seems to me to be that Fittkau & Lehmann (1970) have designated a "neotype" instead of following the normal procedure and make it part of the holotype.

May I suggest that the label in question is altered accordingly, and that the whole case may then be dropped.

Appendix 5

COMMENT ON THE REQUEST FOR A RULING ON THE STATUS OF PUPAL AND LARVAL SKINS OR PUPAE AND LARVAE IN THE THIENEMANN COLLECTION, ASSOCIATED WITH ADULTS WHICH HAVE BEEN DESCRIBED AND NAMED BY KIEFFER (INSECTA, DIPTERA). Z.N. (S.) 1968

(See Volume 28, pages 171–172)

By James E. and Mary F. Sublette (*Eastern New Mexico University, Portales, New Mexico, U.S.A.*)

We would support the request to recognize the Thienemann larval and pupal specimens as part of a syntypic series which included the adults described by Kieffer only if the association is unequivocally assured by either (1) a statement in a publication of Thienemann that the adults were described by Kieffer, or (2) the curated material at Plön bears an original label which states the material is associated with adults described by Kieffer.

In light of the generally poor quality of the Kieffer descriptions, a designation of a lectotype from the Thienemann material would promote stability in a family notorious for nomenclatural change.

DECISION OF THE COMMISSION

Dr Nye's report was circulated on 22 November 1977 with Voting Paper (1977)27, in which the members of the Commission were invited to vote for or against the proposals set out in paragraph 10 of the report. At the close of the voting period on 22 February 1978, the state of the voting was as follows:

Affirmative Votes – fifteen (15) received in the following order: Melville, Brinck, Holthuis, Eisenmann, Alvarado (a conditional vote with the majority), Vokes, Sabrosky, Tortonese, Corliss, Starobogatov, Dupuis, Nye, Bayer, Heppell, Ride.

Negative Votes – two (2): Mroczkowski, Cogger.

Late affirmative votes were returned by Habe and Welch. Bernardi was on leave of absence. No voting papers were returned by Binder, Kraus and Willink.

The following comments were sent in by members of the Commission with their voting papers:

Eisenmann: 'I favour clearing up the problems of the individual case, but do not wish my vote taken as a position on the complex general principle.'

Alvarado: 'At a consultative meeting of the Entomological Group of the Real Sociedad Española de Historia Natural we did not reach a conclusive opinion. I therefore prefer to vote with the majority.'

Mroczkowski: 'I must vote against the modified request for a ruling on the status of pupal and larval skins in the Thienemann collection, and in particular against part (a) of the request. My objections are as follows:

'(1) The pupal or larval skin and the adult reared from the same specimen are biologically parts of the same individual, but are different objects, and therefore for the purposes of nomenclature are not the same. Likewise in Gastropoda, the shell and the body are two different "objects" of one specimen.

'(2) The description of species based on only one "object" is not so exhaustive as one based on all "objects". If the author examined some "objects" of one specimen, the taxonomic conclusions may be different from those reached if only one "object" is examined. Typical cases arise in Gastropoda: descriptions based on shell and body and those based on empty shells only lead to different taxonomic conclusions.

'(3) "The type series of a species consists of all the specimens on which its author bases the species . . ." [Code Art. 72b]. For me it is clear that only the objects that the author of the species had at his disposal make the type series. "Objects" of the same specimen that were not at the describer's disposal cannot be called holotype, paratype, syntype or lectotype.

'(4) In the new edition of the Code, one word in Art. 72b should be changed: "specimens" should be replaced by "material".

'(5) In consequence, neither of the classes of material in the Thienemann collection belongs to the type series, but these specimens should be given preference if and when neotypes are designated.'

Cogger: 'Given the wording of the first part of the proposal and the ambiguity of the second part, I must vote against it.

'Although I agree with the intention of part (a), the issue concerns the "given adult" and so the phrase' ". . . according to how the species was originally described . . ." should more properly read ". . . according to the status of the given adult in the original description." [This improved wording has been incorporated into the ruling. R.V.M.]

'The intention of part (b) is surely covered, at least in part, by part (a), i.e. it covers those cases in which there is no firm evidence of association of a given adult with the skins of its immature stages. However, this part of the proposal seems to run contrary to Art. 73c by automatically excluding from type status specimens

that may indeed be types, even though they are not at this time identifiable as such; how, under the circumstances described in this part, does one determine with certainty that the primary type and *all* its parts are lost?' [Dr Nye observes: 'There can be no certainty that *all* parts are physically lost, but if unlabelled as such they are "lost" so far as the type series is concerned.']

ORIGINAL REFERENCES

Since no names, nor any titles of works, were placed on any Official List or Index by the Ruling given in the present Opinion, there are no original references to be cited.

CERTIFICATE

I certify that the votes cast on V.P.(77)27 were cast as set out above, that the proposal contained in that voting paper has been duly adopted, and that the decision so taken, being the decision of the International Commission on Zoological Nomenclature, is truly recorded in the present Opinion No. 1147.

R.V. MELVILLE
Secretary
International Commission on Zoological Nomenclature
London
18 December 1979